

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the....claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

MPEP 2131.01. Multiple references may be proper when extra cited references are cited to:

- (A) Prove the primary reference contains an "enabled disclosure";
- (B) Explain the meaning of the term used in the primary reference; or
- (C) Show that the characteristic not disclosed in the reference is inherent.

Claims 1-3, 6-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Pletcher (4,522,590). Pletcher shows an orthodontic ring comprising a continuous circular wire body 10 and a twisted hook portion 23 formed from the wire body. The body has a circumference and a diameter, each of which are chosen with respect to the size of the orthodontic bracket (see column 2, lines 40-46).

Claim1. I agree that claim1, as written, is anticipated by Pletcher (4,522,590). A special note that Pletcher states in column 2, line 47 "in one form, ring 10 is made by forming a circle". The Merriam-Webster dictionary defines a ring as "a circular band" and a circle as a "closed plane curve, every point of which is equidistant from a fixed point within the curve". Ring and circle are synonymous. It is further noted in Pletcher in column 4, lines 28-34 **"rings according to the invention need not be precisely circular prior to installation (an oval shape, for example, is quite acceptable), but should be configured for the convenient "loose" preliminary fitting behind the bracket tie wings prior to twisting. The circular configuration is preferred as a matter of manufacturing convenience, and because it is easily fitted to most styles of orthodontic brackets"**. With this statement Pletcher teaches away from shapes, other than circles and ovals, such as rectangular shapes. The Pletcher claims use "ring" in column 4, lines 46, 54, 57, 60, 63 and 67 and column 5 lines 3 and 7.

As to claims 2, 3, 8 and 9, note the dimensions set forth in column 2, lines 40-46).

Claim 2. Pletcher places the wire body diameter 1/4"-1/8" while the instant invention places the wire body diameter at 4mm-10mm. They are similar, but both are determined by the dimensions of an orthodontic bracket. There was nothing novel about Pletcher using these dimensions if they are viewed standing alone:

Claim 3. Pletcher places the wire cross sectional diameter at .010"-.014" and the present invention the cross sectional diameter is .008"-.014". As in claim 2 Pletcher's dimensions are not novel to Pletcher's invention, standing alone, because the dimensions are determined by the size and design of the orthodontic brackets. This is true in the present invention, the dimensions further define an independent claim 1. If claim 1 is allowable then the dimensions should be allowable as they were in Pletcher, on the grounds a dependent claim includes all the limitations of the claims it refers to.

Claim 6. This has been discussed in claim 2.

Claim 8. This has been discussed in claim 2.

Claim 9. This has been discussed in claim 3.

As to claims 4 and 10, note that the figures show the wire as being a single strand.

Claim 4. I agree a "single strand wire" is disclosed in the figures in Pletcher. It is of importance to note Pletcher does not disclose a "multiple strand wire" as the present invention does in claim 11.

Claim 10. This has been discussed in claim 4.

As to claim 7, note that the wire body may be oval (column 4, lines 28-30).

Claim 7. As in claim 1, I agree that claim 7, as written, is anticipated by Pletcher. The variation in the instant invention is oval, which Pletcher discloses.

Claim Rejections -35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Rejections under 35 U.S.C. 103(a).

I am responding with the following law in mind:

Prima Facie Obviousness

- (1) Some suggestion or motivation.....to modify.....combine.
- (2) Reasonable expectation of success.
- (3) Prior art must teach or suggest all the claim limitations MPEP § 2143.03.

MPEP § 2144.05

Prima Facie Obviousness may be rebutted by showing that the art, in any material respect, teaches away from the claimed invention (In re Geisler).

Claims 6 and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pletcher (4,522,590).

Claim 6. I agree, Pletcher fully discloses the process of placing and forming the orthodontic hook. It should be pointed out Pletcher's process standing by itself is not new and novel at Pletcher's time of invention. This is the same way ligature tie wires have been formed and placed since the beginning of the twentieth century.

Claim 12. This has been discussed in claim 6.

Claims 6 and 12 are considered product by process claims and the product itself does not depend on the process of making it. The method steps claimed do not impart a distinctive structural characteristic to the claimed tie and would have been an obvious method to make the tie.

Claim 6. I agree with your conclusion.

Claim 12. I agree with your conclusion.

Claims 13-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pletcher (4,522,590) in view of Hanson (5,885,074). Pletcher does not disclose that the wire body is rectangular. Hanson shows a tie for an orthodontic bracket. The tie may be circular (Fig. 1) or rectangular (Fig. 2). It would have been obvious to one of ordinary skill in the art to make the tie of Pletcher with a rectangular shape, in view of Hanson, if a certain amount of friction on the archwire (that the rectangular shape would give) is desired. Claim 18 is considered product by process claims and the product itself does not depend on the process of making it. The method steps claimed do not impart a distinctive structural characteristic to the claimed tie and would have been an obvious method to make the tie.

Claim 13. "A continuous rectangular wire body" refers to the body made of a wire which is rectangular in cross section. In orthodontics round (cross section) wires are used early in orthodontic treatment and rectangular (cross section) wires are used for major tooth movement, such as torquing teeth, and finishing. Hanson in figure 2 does not disclose a wire rectangular in cross section. Hanson discloses a round (cross section) wire in figure 2. Note 20 in figure 1 discloses the round cross section. Hanson does disclose a "body" formed in the shape of a rectangle which is different than claim 13 in the present invention. The term "rectangular wire" for a person of ordinary skill in the art of orthodontics refers to the cross section of the wire, not the shape the wire is formed into. The most universal orthodontic appliance used in the world today is the edgewise appliance, edgewise refers to the fact the rectangular wire is mounted on edge within the orthodontic brackets. In reviewing Pletcher column 2, line 40, "round wire

having a cross sectional diameter", column 4, lines 55 and 56 "circular cross section" and column 6, line 4 and 5 "wire has a diameter". Pletcher at no time mentions a rectangular cross section wire.

Claim 14. Refer to claim 13.

Claim 15 Refer to claim 13.

Claim 16. Refer to claim 13.

Claim 18. I agree to your conclusion, the product does not depend upon the process.

Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pletcher (4,522,590) in view of Andreiko et al (5,018,969). Pletcher does not disclose that the tie is made of a multiple strand of two or more wires. Andreiko shows an archwire comprised of a multiple strand of at least two wires. A multiple strand wire is easier to shape than a single strand wire (column 2, lines 3-5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the tie of Pletcher of a multiple strand wire, in view of Andreiko, in order to make it easier to form the hook.

Claims 5 and 11. In Andreiko column 2, lines 3-5 "to ease the forces required to shape the orthodontic archwire to the configuration of the teeth-----" does not refer to shaping the archwire. It refers to the flexibility of the braided archwire when it is attached to mutually out of aligned teeth. Note Andreiko's patent is titled "Braided Elastic Wire, With Memory". Also, note column 4, line 66 and 67 "substantially perfect memory even when it is sharply bent or shaped". This form of braided wire as Andreiko has disclosed and claimed could not be used to form an attachable hook in the present invention because the wire cannot be formed or bent. The Andreiko wire is somewhat comparable to bending a rubber band. As such, it would not be obvious for one of ordinary skill in the art of orthodontics to make the tie of Pletcher with multiple stranded wire.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pletcher (4,522,590) in view of Hanson (5,885,074) as applied to claim 13 above, and further in view of Andreiko et al (5,018,969). Pletcher does not disclose that the tie is made of a multiple strand of two or more

wires. Andreiko shows an archwire comprised of a multiple strand of at least two wires. A multiple strand wire is easier to shape than a single strand wire (column 2, lines 3-5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the tie of Pletcher as modified by Hanson of a multiple strand wire, in view of Andreiko, in order to make it easier to form the hook.

Claim 17. As discussed above the multiple strand wire as disclosed and claimed is not formable which definitely does not make it "easier to form a hook".

Information Disclosure Statement

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

The references in the specification were not intended to be in the information disclosure statement.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "22" has been used to designate two different elements in Fig. 6. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "61" has been used to designate two different elements in Figs. 9 and 10. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 55 (page 5, line 14), 56 (page 5, line 15), 57 (page 5, line 17), 2 (page 6, line 4). A proposed drawing correction or corrected